

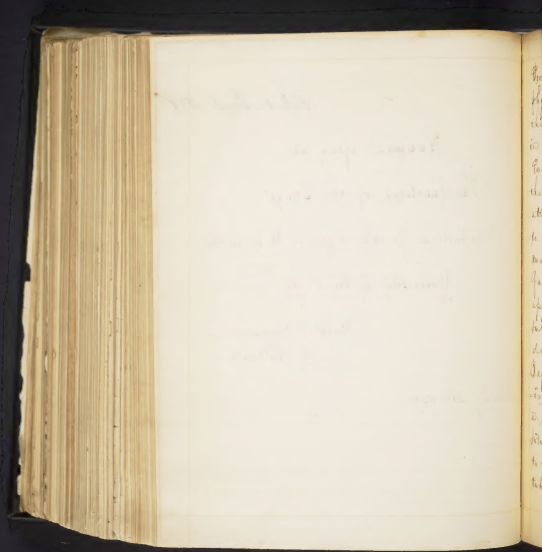
87 Callowhill

Paper March 1828

Inaugural essay on
 "The Functions of the Lungs"
 Submitted for the degree of M.D. in the
 University of Penn.^a by

Mark B. Goodman—
 of Philadelphia

Library 21st 1828



Probably there is no requiring in the whole range of
Physiology in a more unsatisfactory state than
that concerning the ventilation of the lungs
is the lungs, and the production of animal heat.
Ever since the early ages, the subject has occupied
the attention of the Physiologist, and many
attempts made to explain the phenomena, but even
to the present day, though the researches of
modern chemistry have disclosed volumes of
facts, and the ingenuity of able chemists
applies them to an explanation of this curious
subject, yet we have still to regret the "thick
darkness which lies over it".

Before proceeding to a brief survey of the function-
ing of the lungs it may be necessary to take
a hasty glance at these organs.
Situated at the root of the trachea, and attached
to the Os Hyoides, is an "irregular cartilaginous
tube", forming the upper portion of the wind pipe

...the first of the year ...
...the second of the year ...
...the third of the year ...
...the fourth of the year ...
...the fifth of the year ...
...the sixth of the year ...
...the seventh of the year ...
...the eighth of the year ...
...the ninth of the year ...
...the tenth of the year ...
...the eleventh of the year ...
...the twelfth of the year ...
...the thirteenth of the year ...
...the fourteenth of the year ...
...the fifteenth of the year ...
...the sixteenth of the year ...
...the seventeenth of the year ...
...the eighteenth of the year ...
...the nineteenth of the year ...
...the twentieth of the year ...
...the twenty-first of the year ...
...the twenty-second of the year ...
...the twenty-third of the year ...
...the twenty-fourth of the year ...
...the twenty-fifth of the year ...
...the twenty-sixth of the year ...
...the twenty-seventh of the year ...
...the twenty-eighth of the year ...
...the twenty-ninth of the year ...
...the thirtieth of the year ...
...the thirty-first of the year ...
...the thirty-second of the year ...
...the thirty-third of the year ...
...the thirty-fourth of the year ...
...the thirty-fifth of the year ...
...the thirty-sixth of the year ...
...the thirty-seventh of the year ...
...the thirty-eighth of the year ...
...the thirty-ninth of the year ...
...the fortieth of the year ...
...the forty-first of the year ...
...the forty-second of the year ...
...the forty-third of the year ...
...the forty-fourth of the year ...
...the forty-fifth of the year ...
...the forty-sixth of the year ...
...the forty-seventh of the year ...
...the forty-eighth of the year ...
...the forty-ninth of the year ...
...the fiftieth of the year ...
...the fifty-first of the year ...
...the fifty-second of the year ...
...the fifty-third of the year ...
...the fifty-fourth of the year ...
...the fifty-fifth of the year ...
...the fifty-sixth of the year ...
...the fifty-seventh of the year ...
...the fifty-eighth of the year ...
...the fifty-ninth of the year ...
...the sixtieth of the year ...
...the sixty-first of the year ...
...the sixty-second of the year ...
...the sixty-third of the year ...
...the sixty-fourth of the year ...
...the sixty-fifth of the year ...
...the sixty-sixth of the year ...
...the sixty-seventh of the year ...
...the sixty-eighth of the year ...
...the sixty-ninth of the year ...
...the seventieth of the year ...
...the seventy-first of the year ...
...the seventy-second of the year ...
...the seventy-third of the year ...
...the seventy-fourth of the year ...
...the seventy-fifth of the year ...
...the seventy-sixth of the year ...
...the seventy-seventh of the year ...
...the seventy-eighth of the year ...
...the seventy-ninth of the year ...
...the eightieth of the year ...
...the eighty-first of the year ...
...the eighty-second of the year ...
...the eighty-third of the year ...
...the eighty-fourth of the year ...
...the eighty-fifth of the year ...
...the eighty-sixth of the year ...
...the eighty-seventh of the year ...
...the eighty-eighth of the year ...
...the eighty-ninth of the year ...
...the ninetieth of the year ...
...the ninety-first of the year ...
...the ninety-second of the year ...
...the ninety-third of the year ...
...the ninety-fourth of the year ...
...the ninety-fifth of the year ...
...the ninety-sixth of the year ...
...the ninety-seventh of the year ...
...the ninety-eighth of the year ...
...the ninety-ninth of the year ...
...the hundredth of the year ...

and which is denominated "the Larynx". From the larynx is appended a "cylindrical canal" four or five inches in length - terminating in the throat by two ramifications called Bronchia which enter the lungs.

The lungs occupying the greater portion of the throat are a pair of "elastic, light, and spongy organs" - suspended by the tracheal tubes and large blood vessels and in size exactly adapted to the pleura which they fill completely. An exquisitely fine duplicature of this membrane surrounds the lungs - separates them from each other by a fissure which prevents its going between the two is called mediastinum, and lines the entire cavity of the throat.

The structure of the lungs is very delicate, consisting of cells which communicate with the branches of the trachea that ramify through them in every part. These cells are extremely small.

and the membrane of which they are composed
very thin. Each of the extreme ramifications
of the bronchia appears to be surrounded by
a portion of this cellular substance.

Constituted by the cells of the lungs and a
number of various angular figures denominated
"lobuli". They are covered by the proper coat
of the lungs which is extremely delicate, and
closely connected to the general covering
derived from the pleura. Between the lobuli
where they are in contact with each other, there
is interposed a portion of common cellular
substance, which is very distinct from the
cellular structure which communicates with
the ramifications of the bronchia.

Upon the membrane composing the air cells the
pulmonary artery and vein ramify most minutely,
by which the blood is applied to the full
extent (whatever this may exist is) of the

the first of the month of January 1841
I received from you a letter of the 25th
inst. in which you inform me that you
are about to publish a new edition of
your book on the subject of the
constitution of the human mind. I am
glad to hear that you are doing so
and hope that it will be a valuable
contribution to the literature of the
subject. I have not had time to read
your book since I received it but I
trust it will be well received by the
public. I am, Sir, very respectfully,
Your obedient servant,
J. H. [Signature]

atmospheric air.

The pulmonary artery arising from the base of the right ventricle divides into two arteries one to each lung. On reaching the substance of the lungs, these vessels divide into many branches & these are principal lobes. From these branches there arise others which again subdivide into lesser ones until they become capillary and continuous with the radicals of the pulmonary vein.

The pulmonary veins form from the pulmonary artery into four trunks, which progressively changing course from the lungs end open four in number into the left auricle of the heart.

The thoracic aorta or eighth pair of nerves, furnished in its descent from the cranium to the lungs on each side 2 branches called the recurrent it then accompanies the trachea and the bronchia to the membranes of both of which it is principally destined - but it gives branches to the cardiac

Disposition. This is one of the most common
 of the diseases of the eye, and is
 characterized by a redness of the conjunctiva
 and a discharge of tears. It is often
 caused by a cold in the head, or by
 a strain of the eye. The treatment
 is to keep the eye cool, and to use
 astringent drops. If the discharge
 is thick, it may be necessary to use
 a cathartic. The prognosis is
 generally good, but it may become
 chronic if not treated properly.



The same of the day - and yesterday
the sun has been very hot - and all the
day. The sun has been very hot - and all the
day. The sun has been very hot - and all the
day.

Let us now consider the change of position
the sun has taken. The sun has been very
hot - and all the day. The sun has been
very hot - and all the day. The sun has
been very hot - and all the day. The sun
has been very hot - and all the day. The
sun has been very hot - and all the day.
The sun has been very hot - and all the
day. The sun has been very hot - and all
the day. The sun has been very hot - and
all the day. The sun has been very hot -
and all the day. The sun has been very
hot - and all the day. The sun has been
very hot - and all the day. The sun has
been very hot - and all the day. The sun
has been very hot - and all the day. The
sun has been very hot - and all the day.

Let us now consider the change of position
the sun has taken. The sun has been very
hot - and all the day. The sun has been
very hot - and all the day. The sun has
been very hot - and all the day. The sun
has been very hot - and all the day. The
sun has been very hot - and all the day.
The sun has been very hot - and all the
day. The sun has been very hot - and all
the day. The sun has been very hot - and
all the day. The sun has been very hot -
and all the day. The sun has been very
hot - and all the day. The sun has been
very hot - and all the day. The sun has
been very hot - and all the day. The sun
has been very hot - and all the day. The
sun has been very hot - and all the day.



the first time 45° but it increased to 50° and
was maintained but at a distance of 1000 yds.
I saw a few more but not so many as at
the first point. In the distance the land was
seen to be composed of low hills of the body of the
chain of the mountains of a great extent
and the hills were covered by the same
vegetation. The hills were low and the
vegetation was of the same kind as the
first point. The hills were of the same
height and the vegetation was of the same
kind. The hills were of the same height
and the vegetation was of the same kind.
The hills were of the same height and the
vegetation was of the same kind. The hills
were of the same height and the vegetation
was of the same kind. The hills were of the
same height and the vegetation was of the
same kind. The hills were of the same
height and the vegetation was of the same
kind. The hills were of the same height
and the vegetation was of the same kind.

When we were at the first point
the land was of the same height and the
vegetation was of the same kind. The hills
were of the same height and the vegetation
was of the same kind. The hills were of the
same height and the vegetation was of the
same kind. The hills were of the same
height and the vegetation was of the same
kind. The hills were of the same height
and the vegetation was of the same kind.
The hills were of the same height and the
vegetation was of the same kind. The hills
were of the same height and the vegetation
was of the same kind. The hills were of the
same height and the vegetation was of the
same kind. The hills were of the same
height and the vegetation was of the same
kind. The hills were of the same height
and the vegetation was of the same kind.



[illegible]

111

100

111









inhalation acts very powerfully in lowering the temperature, and as this proportion increases with the temperature, it should seem as if this function sufficed to moderate the heat of the body and to preserve the equilibrium. The prostration of fluids in their solution in air is the most powerful means of cooling bodies, and the hands may be cooled to such a degree as to feel benumbed by being held and moved in a dry and warm air. The body elicits cold and reduces its temperature in the midst of a frozen atmosphere. This is accomplished by an increase in the activity of the organs augmenting the sum of the contractions by which caloric is dissipated. Accordingly if the atmosphere in which man is placed be below the temperature of his body, his internal functions go on with redoubled energy: and as more combustions are necessary more elements are required and nutrition becomes more active. If

The first of these is the fact that the
 country is a very fertile one and the
 soil is very rich. The second is that the
 climate is very healthy and the air is
 very pure. The third is that the
 people are very kind and the
 government is very good. The fourth
 is that the country is very beautiful
 and the scenery is very lovely. The
 fifth is that the country is very
 healthy and the people are very
 kind. The sixth is that the
 government is very good and the
 country is very beautiful. The seventh
 is that the people are very kind and
 the government is very good. The eighth
 is that the country is very beautiful
 and the scenery is very lovely. The
 ninth is that the country is very
 healthy and the people are very
 kind. The tenth is that the
 government is very good and the
 country is very beautiful.

on the contrary the air he found warmer than the
body the skin supplies a greater proportion and the
fluids which would have yielded to combustion if
he multiplied a character and schooled.

